

REMARKS

The present amendment is response to the Office Action dated June 24, 2010, which set a three-month period for response. Filed herewith is a Request for a One-month Extension of Time, making this amendment due by October 24, 2010.

Claims 1-4 and 6 are pending in this application

In the Office Action, the drawings submitted on May 24, 2010 were not accepted on grounds that they contained new matter and the prior objection to the drawings as not showing every feature of the claims was maintained. The specification likewise was objected to as containing new matter and also for failing to provide proper antecedent basis for the claimed subject matter. Claims 1-4 and 6 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite. Claim 1 was rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 3,096,002 to Focht in view of U.S. Patent No. 3,865,283 to Hayes. Claims 2-6 were rejected under 35 U.S.C. 103(a) as being unpatentable over Focht in view of Hayes and further in view of U.S. Patent No. 3,156,382 to Michell.

Turning first to the objection to the drawings, filed herewith are amended Figs. 1 and 3 which have been amended to delete the markings added in the last amendment so that Figs. 1 and 3 correspond to the figures as originally filed.

With regard to the continued objection to the term "spring-elastic", the Applicants believe that the original German language term "federelastisch" was

incorrectly translated to the term “spring-elastic”. A more appropriate and accurate term would be either “elastic” or “resilient” to convey that the “valve stem 8 is configured to apply a restoring force”, as described in the specification and as recited in claims 1 and 2. The term “resilient” has therefore been substituted for “spring-elastic”. The Applicants submit that this change only reflects a correction of the originally translated term and does not constitute new matter, since the relevant properties of the valve stem are clearly and unambiguously defined by the respective context in both the specification and the claims.

Regarding the rejection under Section 112, second paragraph, with regard to clarify, the Examiner notes on page 5, second paragraph of the Office Action that it is not clear if certain features of the head (valve plate and valve stem) would belong to the head or to the container.

The Applicants disagree that the claimed limitation is indefinite. Claim 1 clearly defines the valve plate and valve stem as part of the foam head (“foam head...comprising...”). In both claim 1 and the specification (at page 2, lines 28-31), properties of the head are described, that is, the property to form a stable connection with the container. When assembled, the head and container form a common unit (“It is assured that the foam head 1 remains joined to the propellant container”, specification, page 2, lines 29-31 and claim 1).

Furthermore, claim 1 as well as the specification on page 2 identically define “a foam head for a propellant container, having inner and outer crimped edges of a valve plate”. It is clear for one skilled in the art that these definitions

relate to an assembled device, which is more appropriate to describe function and interaction than using a part of the device. However, the depiction of single components allows a more detailed view of the particular components. In this connection, Figs. 5 and 6 show some details of non-assembled parts, in particular recess 16 within the lower portion of the head. It is clear for one skilled in the art that the details of Figs. 5 and 6 do not show all components for the sake of clarity. In particular, recess 16 would not be easily understandable, if all components of the head as shown in Fig. 1 were illustrated.

In addition, the interaction of the upper head components and the valve components is clearly described on page 2, line 22 and on page 3, line 28, which states that the opening 7 (as part of the upper foam head) is “seatable” on the valve stem. No passage in the application uses a definition according to which the valve components would be a part of the container, rather than a part of the head. This also applies to page 3, lines 12 and 28, which define that the head comprises a component, which is arranged to be connected with the valve stem, which is also a part of the head.

The Applicants therefore submit that the language of the claims clearly defines the above elements.

On page 6, third paragraph, the Examiner maintains that the opening 7 is considered to refer only to the upper outlet of the head, rendering it unclear how the container is connected to the head. The Applicants again disagree.

In all of the figures, reference numeral 7 is associated with a specific component via an arrow commonly directed onto the opening from above. This

allows the opening to be denoted in Figs. 6, 8, and 9. Reference numeral 7 does not pertain to a particular line or area in the figures, but indicates a functional element, which is used to supply foam and which is embodied to be seatable directly on the valve stem (see page 2, line 21-22 of the specification). In this context, it is unambiguously clear for one skilled in the art from the figures and the accompanying description that the “opening” does not exclusively relate to the two-dimensional area on the outer surface of the head abutting to the head’s environment. Rather, the “opening” in the sense of the present invention is equivalent to an opening, for example in a wall, that enables elements to pass from one side to another, including the entry cross-section, the outlet cross-section, and the inner surface of the opening extending through the wall connecting the entry cross-section and the outlet cross-section. This reading of “opening” is in particular consistent with the definition on page 2, lines 21-22. Further, the meaning of the term “opening” is in line with <http://www.thefreedictionary.com/opening>: “An open space serving as a passage or gap”.

Neither the figures nor the description define an additional “vertical passage” as the Examiner describes on page 5, third paragraph, of the Office Action. Such an additional component would separate the part of the opening supplying the foam from the part of the opening directly sitting on the valve stem, in contract to the definition on page 2, lines 21-22 of the specification.

Therefore, the term “opening” is not indefinite and corresponds to the disclosure.

Claims 1 and 2 have been amended to define the recess “forming an annular spring” as set forth in the specification. Claim 4 has been amended to define that the graspable part is “embodied as slip-proof”, as disclosed on page 4, lines 8-9.

Turning now to the substantive rejections of the claims, Focht shows a dispensing head in Figs. 1 and 4, which is actuated by tilting a valve stem 5. The relationship between the degree of actuation of platform 12 and the tilting angle of a valve stem 5 is defined exclusively by the load deflection curve of the valve stem and the lever defined by abutment 3 and boss 9 (see column 2, lines 61-71). In particular, all components connecting platform 12 and the valve stem 5 are rigid elements. Since the valve must handle a high pressure, the load deflection curve of the valve stem must be relatively hard. In particular, a small deviation from a current position of platform 12 leads to a relatively strong change of the flow rate defined by the valve, and in turn, leads to impairment in the controllability of the flow rate defined by the valve, which cannot be compensated by abutment 3 and boss 9.

Hayes shows a dispensing head having a detent skirt 52b with slots 55 (see column 4, line 66 through column 5, line 11). It is explicitly disclosed that these slots 55 slow a limited flexing movement when beads 54b are by-passed during assembly. Such a sustaining deformation in order to adapt the shape of the skirt to the container components, on which the skirt is fitted, is basically distinct to a resilient effect modifying the activation sensitivity of the valve during operation as defined by the invention. In particular, column 5, lines 14-22

describe a clearance space 57 between beads 54b (lower edge of the skirt) and wall 28b (upper surface of the valve plate) due to safety reasons. During operation, this gap 57 prevents any force from being exerted on the skirt having the slots. Thus, the gaps shown in Hayes are adapted to provide flexibility during assemblage only. Hayes neither discloses nor suggests a recess within a lower portion, which is deformed during normal operation in order to adjust the sensitivity (i.e., load deflection curve) of the valve).

Neither Focht nor Hayes suggests using recesses in a lower portion of a foam head in order to modify the sensitivity of the valve with regard to the movement of the actuation element.

Therefore, combining the teachings of Focht and Hayes would lead to a dispensing head having slits in a lower portion of the head for providing flexibility during assembly. However, the flexibility provided in this manner would not concern any element between the actuation element and the valve, in particular due to the gap taught by Hayes excluding any compression of the element comprising the slits. Finally, the problem of a relatively hard load deflection curve of pressurized valves is not discussed in Hayes or in any other cited reference. Since the head in Focht can easily be inserted into the upper part of the pressurized container, no compression of a fitting component due to press fit occurs. One skilled in the art would be provided with no teaching, suggestion or motivation to introduce recesses adapted for absorbing deformations due to a press fit resulting from assembly into a component which does not experience any deformation during or after assembly. Since none of the cited references

discuss using recesses in order to modify the actuation sensitivity of a valve during operation, introducing recesses in to a part of the head, which transmits an actuation force, as required by the Examiner's combination of references, involves an ex-post-factum analysis – that is, it constitutes impermissible hindsight.

The further reference to Michell shows an aerosol container comprising a cap 13 and a container 10. Michell, however, does not show any components connecting valve and actuation element. In particular, none of the figures even shows a valve. Therefore, Michell's teachings do not go beyond the teachings of Focht or Hayes.

In Alplanalp, a device is shown having a head which directly sits on the valve stem. The actuation force is directly forwarded to the valve. No component is provided for transmitting the actuation force, which could be used to adapt the load deflection curve of the valve.


In contrast to the cited references, the device of the present invention comprises at least one recess in the lower peripheral region forming an annular spring and allowing the partial absorption of deformations due to actuation. This allows the present invention to modify the sensitivity of the valve, that is, to adjust the load deflection curve smoothed by the additional resilient effect and by additional deformation provided by the recess. This effect is intensified by the inner crimped edge 3 interacting with the lower portion 12, since both have approximately equal diameters (see claim 1 and Fig. 3). In this manner, the invention provides additional mechanical elements which adjust the relationship

between degree of actuation of actuation button 6 and the tilting angle of valve stem 8, enabling a significantly increased controllability.

Therefore, the practitioner could not be led to the present invention by combining the references as proposed. It is respectfully submitted that since the prior art does not suggest the desirability of the claimed invention, such art cannot establish a prima facie case of obviousness as clearly set forth in MPEP section 2143.01.

The application in its amended state is believed to be in condition for allowance. Action to this end is courteously solicited. Should the Examiner have any further comments or suggestions, the undersigned would very much welcome a telephone call in order to discuss appropriate claim language that will place the application into condition for allowance.

Respectfully submitted,


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